1.   (Original) A processor-implemented method for searching for a data object in a plurality of nodes forming a peer-to-peer network, the method comprising:

forming Bloom-Filters at the nodes as a function of data available via the nodes;

communicating the Bloom-filters between peer-to-peer coupled nodes of the peer-to-peer network that have formed connections using incentive-based criteria to control whether one node connects to another node;

forming a search expression for locating the data object;

selecting nodes to propagate the search expression as a function of the Bloom-filters and the incentive-based criteria;

propagating the search expression to the selected nodes; and

outputting a result of the search expression from nodes that satisfy the search expression.

2.   (Original) The method of claim 1, wherein forming respective Bloom filters at the nodes includes combining Remote Bloom-filters (RBFs) received from peer-to-peer coupled nodes of the respective nodes.

3.   (Original) The method of claim 1, wherein selecting the nodes includes forming a query Bloom-filter based on the search expression and comparing the query Bloom-filter to the respective Bloom-filters.

4.   (Original) The method of claim 3, wherein comparing the query Bloom-filter to the respective Bloom-filters includes forming a ranking associated with respective Bloom-filters as a sum of bits of the query Bloom-filter that match the bits of the respective Bloom-filter.

5.   (Original) The method of claim 3, wherein comparing the query Bloom-filter to the Bloom-filters includes forming a ranking associated with respective Bloom-filters as a count of bits of the query Bloom-filter that match the bits of the respective Bloom-filter.

6. (Original) The method of claim 1, wherein forming the respective Bloom filters at the nodes includes forming the respective Bloom filters as a function of a local Bloom-filter based on data locally accessible by the respective nodes.

7. (Original) The method of claim 1, wherein the peer-to-peer network comprises a Gnutella network.

8. (Currently Amended) A system comprising:
a plurality of data processors coupled via a peer-to-peer network arrangement, each data processor including;

a network interface arranged to provide one or more respective connections with one or more associated data processor of the peer-to-peer network arrangement, the connections formed using an incentive-based criteria;

a memory for storing one or more respective remote Bloom filters representing data accessible via the associated connections; and

a processing unit arranged to:[[;]]

form a query Bloom-filter based on a data query;

select nodes to propagate a search expression associated with the query based on incentive-based criteria and the one or more respective remote Bloom filters;

select a subset of the connections as a function of the query Bloom-filter and the respective remote Bloom-filters associated with the connections; and

send the data query to the subset of the connections.

9. (Original) The system of claim 8, wherein at least one data processor of the plurality of data processors further includes a local data storage adapted for storing data objects.

10. (Original) The system of claim 9, wherein the memory of the at least one data processor is configured for storing a local Bloom-filter representing data accessible via the local data storage.

11.   (Original) The system of claim 8, wherein the processing units of the data processors are further arranged to publish a Bloom-filter to a selected connection of the one or more connections, the Bloom-filter representing data accessible via the respective data processors.

12.   (Original) The system of claim 11, wherein the Bloom filter is formed as a logical OR of the remote Bloom filters of the respective data processors except for the remote Bloom filter associated with the selected connection.

13.   (Original) The system of claim 11, wherein at least one data processor of the plurality of data processors further includes a local data storage adapted for storing data, and the memory of the at least one data processor is configured for storing a local Bloom-filter representing data accessible via the respective local data storage.

14.   (Original) The system of claim 13, wherein the Bloom filter is formed as a logical OR of: the local Bloom-filter; and
        the remote Bloom filters of the respective data processor except for the remote Bloom filter associated with the selected connection.

15.   (Original) The system of claim 8, wherein the peer-to-peer network arrangement includes a Gnutella network arrangement.

16.   (Currently Amended) A computer-readable <u>storage</u> medium having instructions stored thereon which are executable on a processor for performing steps comprising:

forming one or more respective peer-to-peer connections with one or more network peers of the processor using an incentive-based criteria;

receiving respective remote Bloom-filters representing data accessible via associated peer-to-peer connections; forming a query Bloom-filter based on a data query;

<u>selecting nodes to propagate a search expression associated with the query based on incentive-based criteria and the one or more respective remote Bloom filters;</u>

selecting a subset of the peer-to-peer connections as a function of the query Bloom-filter and the respective remote Bloom filters associated with the peer-to-peer connections; and

sending the data query to the subset of the connections.

17.   (Original) The computer-readable medium of claim 16, wherein the steps further include forming a local Bloom-filter based on data accessible via a local data storage of the processor.

18.   (Original) The computer-readable medium of claim 16, wherein the steps further include sending a Bloom-filter to a selected peer-to-peer connection of the one or more peer-to-peer connections indicating data accessible via the processor.

19.   (Original) The computer-readable medium of claim 18, wherein the Bloom filter is formed as a logical OR of the remote Bloom filters of the processor except for the remote Bloom filter associated with the selected peer-to-peer connection.

20.   (Original) The computer-readable medium of claim 11, wherein the peer-to-peer connections utilize a Gnutella protocol.

21.   (Original) A method for updating a Bloom-filter array having a plurality of bits that indicate data accessible via a peer-to-peer network, comprising:

associating respective counters with the bits of the Bloom-filter array;

receiving a Bloom-filter update having a plurality of bits associated with the bits of the Bloom-filter array that indicate a change in the data accessible via the peer-to-peer network;

changing the respective counters based on the associated bits of the Bloom-filter update;

setting the bits of the Bloom-filter array to zero where the respective counters associated with the bits are zero; and

setting the bits of the Bloom-filter array to one where the respective counters associated with the bits are greater than zero.

22.   (Original) The method of claim 21, wherein the Bloom-filter update indicates data added to the peer-to-peer network, and changing the counters based on the bits of the Bloom-filter update includes incrementing all counters associated with non-zero bits of the Bloom-filter update.

23.   (Original) The method of claim 21, wherein the Bloom-filter update indicates data removed from the peer-to-peer network, and changing the counters based on the bits of the Bloom-filter update includes decrementing all counters associated with non-zero bits of the Bloom-filter update.

24. (Currently Amended) A data processing arrangement, comprising

processor-based means for storing data objects;

processor-based means for forming respective peer-to-peer data connections with one or more network peers using an incentive-based criteria;

processor-based means for storing remote Bloom-filters associated with respective peer-to-peer data connections, the Bloom-filters indicating data accessible via the respective peer-to-peer data connections;

processor-based means for forming a query for locating one or more data objects of the network peers; ~~and~~

processor-based means for selecting nodes to propagate a search expression associated with the query based on incentive-based criteria and the one or more respective remote Bloom filters; and

processor-based means for sending the query to a subset of the peer-to-peer data connections as a function of the query and the Bloom filters associated with the respective peer-to-peer data connections.

25. (Original) The data processing arrangement of claim 24, wherein the peer-to-peer data connections utilize a Gnutella protocol.